What is claimed is:

1. A method for non-invasive monitoring of subject heartbeat rate, said method comprised of:
    - Collecting pressure changes received from at least two sensors located beneath the subject's body;
    - Finding the difference between at least two sensor signal measurements;
    - analyzing the difference signal for identifying and detecting heartbeats or heart rate.
2. The method of claim 1 further comprising the step of filtering the calculated difference signal for reducing background noise and respiratory artifact and other body movements in accordance with predefined signal frequency band values.
3. The method of claim 1 further comprising the step of identifying the respiration rate.
4. The method of claim 1 further comprising the step of calculating the sum of at least two signal measurements and filtering and analyzing the calculated sum signal in combination with the difference signal for identifying and detecting the heartbeat rate and respiration rate.
5. The method of claim 1 further comprising the step of calculating the maximum difference signal between sets of sensors, wherein the identification and detection of the heartbeat rate is based on said maximum signal difference.
6. The method of claim 1 further comprising the step of calibration for calculating the pre-defined filter signal frequency band values, wherein calibration is based on the FFT algorithm.
7. The method of claim 1 wherein the filtering is preformed by a high pass filter, wherein the cut off frequency is twice a pre-defined heart rate.
8. The method of claim 1 wherein the analyzing includes identifying peak values of the filtered signal.

9. The method of claim 1 wherein at least one sensor is located beneath the lower part of the subject's body and at least one sensor is located beneath the upper part of the subject's body.
10. The method of claim 1 wherein the difference signal represents the horizontal movements of the subject and the analyzing includes detection of blood circulation.
11. A system for non-invasive monitoring of subject heartbeat rate, said system comprised of:
    - at least two sensors located beneath the subject's body for measuring pressure changes;
    - an electronic mechanism for finding the difference between at least two sensor signal measurements;
    - a processing module for analyzing the difference signal to identify and detect the heartbeats or heart rate.
12. The system of claim 11 further comprising a filtering module for reducing background noise of the difference signal in accordance with pre-defined signal frequency band values
13. The system of claim 11 wherein the processing module further identifies the respiration rate
14. The system of claim 11 wherein the electronic mechanism further calculates the sum of at least two signal measurements and the processing module further analyzes the calculated sum signal in combination with the difference signal for identifying and detecting the heartbeat rate and respiration rate.
15. The system of claim 11 wherein the electronic mechanism further calculates the maximum difference signal between sets of sensors, wherein the identification and detection of the heartbeat rate is based on said maximum signal difference.
16. The system of claim 11 further comprising a calibration module for calculating the pre-defined signal frequency band values, wherein calibration is based on the FFT algorithm.
17. The system of claim 11 wherein the filtering module is a high pass filter, wherein the cut off frequency is twice a pre-defined heart rate.

18. The system of claim 11 wherein at least one sensor is located beneath the lower part of the subject's body and at least one sensor is located beneath the upper part of the subject's body.
19. The system of claim 11 wherein the analyzing includes identifying peak values of the filtered signal.
20. The system of claim 11 wherein the difference signal represents the horizontal movements of the subject and the filtering and analyzing includes detection of the blood circulation.
21. The system of claim 11 wherein the sensors are integrated within a single rigid housing.